

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A surgical fluid pump system ~~Transport device for sterile fluids to~~
~~for transporting~~ a sterile fluid from a source to a surgical instrument consumer, said system
comprising:

a drive system; and

a pump system comprising:

an inlet for establishing a fluid connection to said source;

an outlet for establishing a fluid connection to said surgical instrument;

a pump having a piston that contacts said sterile fluid to apply a pressure to said sterile fluid,
said pump having a suction cycle for drawing in the sterile fluid and an output cycle for ejecting the
sterile fluid; and

~~a pump that transports volumetrically, with a suction cycle for drawing in said fluid and an~~
~~output cycle for ejecting said fluid;~~

~~conduit and valve devices for connecting said pump to the source and to said consumer; and~~
~~that provide a sterile fluid path between said inlet, said pump and said outlet, wherein~~

the pump system is releasably connected to the drive system, and

~~drive means to drive said pump, that is constructed and connected to said pump~~ said drive
system drives said pump system in such a way that said suction cycle is shorter than said output
cycle and that said fluid is supplied to said ~~consumer~~ outlet with a substantially constant pressure.

2. (Currently amended) A surgical fluid pump system ~~Transport device for sterile fluids to~~
~~for transporting~~ a sterile fluid from a source to a surgical instrument consumer, said system
comprising:

a drive system; and

a disposable pump system comprising:

an inlet for establishing a fluid connection to said source;

an outlet for establishing a fluid connection to said surgical instrument;

three pumps, each pump having a piston that contacts said sterile fluid to apply a pressure to said sterile fluid, each of said pumps having a suction cycle for drawing in the sterile fluid and an output cycle for ejecting the sterile fluid; and

a pump that defines at least three pump chambers and that transports volumetrically, with a suction cycle for drawing in said fluid and an output cycle for ejecting said fluid;

conduit and valve devices for connecting said pump to said source and to said consumer; and that provide a sterile fluid path between said inlet, said pumps and said outlet, wherein

the pump system is releasably connected to the drive system, and

drive means to drive said pump, that is constructed said drive system drives said pump system in such a way that the suction and output cycles of said pumps chambers overlap one another.

3. (Currently amended) Transport device The surgical fluid pump system according to claim 1, wherein said pump comprises at least one first and one second piston/cylinder unit defining first and second pump chambers, which can be controlled in a push-pull manner in such a way that said suction cycle in said the first pump chamber is shorter than said the output cycle in said second pump chamber (35, 36) and conversely

said pump system comprises a first pump and a second pump, and

said drive system drives said first and second pumps in a push-pull manner in such a way that the suction cycle in the first pump is shorter than the output cycle in the second pump and conversely.

4. (Currently amended) ~~Transport device~~ The surgical fluid pump system according to claim 1, wherein said drive ~~means is constructed~~ system drives said pump system in such a way that said output cycles overlap.

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Currently amended) ~~Transport device~~ The surgical fluid pump system according to claim 2, wherein said drive ~~means for each pump chamber~~ said drive system comprises a separate, controllable rotary drive motor configured and adapted to mechanically drive said piston of each of said pumps.

9. (Canceled)

10. (Currently amended) ~~Transport device~~ The surgical fluid pump system according to claim 2, wherein said drive ~~means is constructed~~ system drives said pump system in such a way that said output cycles overlap.

11. (Currently amended) ~~Transport device~~ The surgical fluid pump system according to claim 2, wherein said drive ~~means is constructed~~ system drives said pump system in such a way that said fluid is supplied to said consumer outlet with a substantially constant pressure.

12. (Canceled)

13. (Canceled)

14. (Currently amended) A surgical fluid pump system ~~Transport device for sterile fluids for~~ to transporting a sterile fluid from a source to a surgical instrument, said system comprising:

a drive system; and

a pump system comprising:

an inlet for establishing a fluid connection to said source;

an outlet for establishing a fluid connection to said surgical instrument;

first and second pumps, each of said first and second pumps having a piston that contacts said sterile fluid to apply a pressure to said sterile fluid, each of said pumps having a suction cycle for drawing in the sterile fluid and an output cycle for ejecting the sterile fluid; and

a pump that transports volumetrically, with a suction cycle for drawing in the fluid and an output cycle for ejecting the fluid;

conduit and valve devices for connecting the pump to the source and to the surgical instrument, that provide a sterile fluid path between said inlet, said first and second pumps and said outlet, wherein

drive means to drive the pump, wherein

the pump comprises first and second pump chambers;

the drive means system drives said pump system are constructed and connected to the pump in such a way that, for each of said first and second pumps, the suction cycle is shorter than the output cycle and in such a way that the output cycles overlap,

the pump system is releasably connected to the drive means system, and

the pump and the conduits, together with the valve means, are said pump system is constructed as a disposable unit.

15. (Currently amended) ~~Transport device~~The surgical fluid pump system according to ~~Claim-claim~~ 14, wherein said drive system drives said first and second pumps chambers can be controlled in a push-pull manner in such a way that the suction cycle in the first pump chamber is shorter than the output cycle in the second pump chamber and conversely.

16. (Currently amended) ~~Transport device~~ The surgical fluid pump system according to ~~Claim-claim~~ 14, wherein the drive ~~means system~~ drives said pump system is constructed in such a way that the fluid is supplied to the ~~consumer~~ outlet with a substantially constant pressure.

17. (Currently amended) ~~Transport device~~ The surgical fluid pump system according to ~~Claim-claim~~ 14, wherein

~~the drive means for each pump chamber~~ said drive system comprises a separate, controllable rotary drive motor configured and adapted to mechanically drive said piston of each of said first and second pumps.

18. (Canceled)

19. (Currently amended) A surgical fluid pump system ~~transport device for sterile fluids~~ for transporting a sterile fluid from a source to a consumer ~~surgical instrument~~, comprising:

a drive system; and

a pump system comprising:

an inlet for establishing a fluid connection to said source;

an outlet for establishing a fluid connection to said surgical instrument;

at least three pumps, each of said pumps having a piston that contacts said sterile fluid to apply a pressure to said sterile fluid, each of said pumps having a suction cycle for drawing in the sterile fluid and an output cycle for ejecting the sterile fluid; and

a pump that transports volumetrically, with a suction cycle for drawing in the fluid and an output cycle for ejecting the fluid;

conduit and valve devices for connecting the pump to the source and to the consumer; that provide a sterile fluid path between said inlet, said pumps and said outlet, wherein

~~drive means to drive the pump, such that~~

~~the pump system is releasably connected to the drive system, and~~

~~the pump comprises at least three pump chambers and the drive means system drives said pump system are constructed and connected to the pump in such a way that, for each of said at least three pumps, the suction cycle is shorter than the output cycle.~~

20. (Currently amended) ~~Transport device~~The surgical fluid pump system according to ~~Claim-claim~~ 19, wherein the drive means ~~system drives said pump system~~ is constructed in such a way that the output cycles overlap.

21. (Currently amended) ~~Transport device~~The surgical fluid pump system according to ~~Claim-claim~~ 19, wherein the drive means ~~system drives said pump system~~ is constructed in such a way that the fluid is supplied to the ~~consumer~~outlet with a constant pressure.

22. (Canceled)

23. (Currently amended) ~~Transport device~~The surgical fluid pump system according to ~~Claim-claim~~ 19, wherein ~~at least one of the pump and the conduits~~the pump system is constructed as a disposable unit.

24. (Canceled)

25. (Currently amended) ~~Transport device~~The surgical fluid pump system according to ~~Claim-claim~~ 19,

~~wherein the drive means for each pump chamber wherein said drive system comprises a separate, controllable rotary drive motor configured and adapted to mechanically drive said piston of each of said pumps.~~

26. (Canceled)

27. (Currently amended) A surgical fluid pump system ~~A transport device for sterile fluids~~
~~to for transporting~~ a sterile fluid from a source to a ~~consumer,~~ surgical instrument, said system
comprising:

a drive system; and

a pump system comprising:

an inlet for establishing a fluid connection to said source;

an outlet for establishing a fluid connection to said surgical instrument;

at least three pumps, each of said pumps having a piston that contacts said sterile fluid to
apply a pressure to said sterile fluid, each of said pumps having a suction cycle for drawing in the
sterile fluid and an output cycle for ejecting the sterile fluid; and

a pump that transports volumetrically, with a suction cycle for drawing in the fluid and an
output cycle for ejecting the fluid;

conduit and valve devices for connecting the pump to the source and to the consumer, that
provide a sterile fluid path between said inlet, said pumps and said outlet, wherein

drive means to drive the pump, such that

the pump system is releasably connected to the drive system, and

the pump comprises at least three pump chambers and the drive means~~system~~ drives said
pump system ~~is constructed~~ in such a way that the suction and output cycles of the pumps chambers
overlap one another.

28. (Currently amended) ~~Transport device~~ The surgical fluid pump system according to
~~Claim-claim~~ 27, wherein the drive means ~~system~~ drives said pump system ~~is constructed~~ in such a
way that the fluid is supplied to the consumer ~~outlet~~ with a constant pressure.

29. (Canceled)

30. (Currently amended) ~~Transport device~~The surgical fluid pump system according to Claim ~~claim~~ 27, wherein ~~at least one of the pump and the conduits~~the pump system is constructed as a disposable unit.

31. (Canceled)

32. (Currently amended) ~~Transport device~~The surgical fluid pump system according to Claim ~~claim~~ 27,

~~wherein the drive means for each pump chamber wherein said drive system~~ comprises a separate, controllable rotary drive motor configured and adapted to mechanically drive said piston of each of said pumps.

33. (Canceled)

34. (New) A disposable surgical fluid pumping device for pumping a sterile fluid from a source to a surgical instrument, comprising:

an inlet for establishing a fluid connection to said source;

an outlet for establishing a fluid connection to said surgical instrument;

a plurality of pumps, each of said pumps including a piston that contacts said sterile fluid to apply a pressure to said sterile fluid,

conduit and valve devices that provide a sterile fluid path between said inlet, each of said plurality of pumps and said outlet, wherein

said valve devices prohibit an outflow of said sterile fluid at said inlet and prohibit an inflow of said sterile fluid at said outlet, and

a portion of said sterile fluid path from said inlet to a respective one of said pumps is common to a portion of said sterile fluid path from said respective one of said pumps to said outlet.